MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2022/2023

DCS5144 – INTRODUCTION TO INFORMATION SYSTEMS

(All sections/Groups)

6 OCTOBER 2023
9.00 a.m. – 11.00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of 5 pages with 2 sections.
2. Attempt **ALL** questions in Section A and Section B. The distribution of the marks for each question is given.
3. Please write all your answers for Section A on the OMR form provided and all answers for Section B in the Answer Booklet provided.

SECTION A: Multiple Choice Questions (20 Marks)

1. What is a structured decision?
   A. A decision made by a group of people collectively.
   B. A decision that is made based on gut feeling and intuition.
   C. A decision made in response to a unique and non-recurring situation.
   D. A decision that follows established rules and procedures for routine situations.

2. Which of the following is a characteristic of unstructured decisions?
   A. They involve long-term planning and have a significant impact on the organisation's overall direction.
   B. They are typically made by lower-level managers.
   C. They focus on short-term operational issues.
   D. They are routine decisions made daily.

3. What are the predictive analytics in the context of decision support?
   A. Predictive analytics summarises past events.
   B. Predictive analytics relies solely on quantitative data.
   C. Predictive analytics uses gut feeling for future predictions.
   D. Predictive analytics forecasts future trends based on data analysis.

4. How does artificial intelligence differ from human intelligence?
   A. Human intelligence involves consciousness, emotions, and subjective experiences, while AI lacks these human qualities.
   B. Human intelligence is purely based on logic, while AI relies on emotions.
   C. AI and human intelligence are identical and interchangeable.
   D. AI can process information faster than human intelligence.

5. _____ is an AI technique involves mimicking the way the human brain processes information through interconnected nodes.
   A. Expert systems
   B. Genetic algorithms
   C. Neural networks
   D. Reinforcement learning

6. _____ is the first step in the problem-solving process for developing a new information system.
   A. Assigning blame for the problem's occurrence
   B. Implementing the chosen solution immediately
   C. Identifying and defining the problem to be solved
   D. Skipping the problem identification phase to save time

Continued ...

7. What is the purpose of the implementation step in the problem-solving process for information system development?
   A. It puts the chosen solution into action and monitors its effectiveness.
   B. It involves reverting to the problem identification stages.
   C. It ensures that all potential solutions are explored.
   D. It finalises the problem definition.

8. _____ is the primary advantage of using the waterfall approach for building information systems.
   A. Rapid development and frequent iterations
   B. Early and continuous delivery of working software
   C. Flexibility to accommodate changing requirements throughout the project
   D. Clear and structured phases, allowing for thorough planning and documentation

9. A key characteristic of the RAD (Rapid Application Development) approach for building information systems is _____.
   A. extensive upfront planning and documentation
   B. sequential development with no room for iterations
   C. heavy reliance on automated testing tools
   D. quick development cycles with a focus on user involvement and continuous feedback

10. In project management, achieving the balance between _____ is important.
   A. different departments' interests
   B. project scope, cost, time, quality, and risk
   C. in-house development and outsourcing
   D. short-term and long-term project goals

11. A potential consequence of errors in an information system are _____.
   A. reduced need for cybersecurity measures
   B. financial losses, data corruption, and compromised security
   C. improved data accuracy and integrity
   D. enhanced system performance and efficiency

12. Why is human error a significant factor in information system vulnerabilities?
   A. Humans are incapable of making errors in technology-related tasks.
   B. Information systems are inherently flawless and impervious to human actions.
   C. Human mistakes can lead to incorrect data entry, software bugs, and security breaches.
   D. Organisations never rely on human input for their information systems.

Continued ...

13. _____ is a key benefit of implementing security and control measures in a business environment.
    A. Eliminating the need for employee training on security protocols
    B. Reducing the risk of unauthorised access, data breaches, and fraud
    C. Increasing operational costs due to extensive security investments
    D. Slowing down business processes to ensure thorough security checks

14. The main objective of risk assessment in the organisational security framework is _____.
    A. to identify and evaluate potential threats and vulnerabilities
    B. to delegate all security decisions to external consultants
    C. to increase the complexity of security measures
    D. to eliminate all risks and vulnerabilities

15. A common technology used to encrypt sensitive data during transmission over networks is _____.
    A. virtual reality
    B. legacy systems
    C. firewall appliances
    D. Secure Socket Layer (SSL) or Transport Layer Security (TLS)

16. What is a primary social issue associated with the increasing automation of jobs through information systems?
    A. Changing the skills required for the workforce and potentially displacing certain job roles.
    B. Reducing the demand for technological advancements.
    C. Eliminating all jobs, leading to mass unemployment.
    D. Improving job satisfaction and work-life balance.

17. Information systems contribute to political challenges in society _____.
    A. by encouraging open and transparent political processes
    B. by reducing the need for political debates and discussions
    C. by expanding the spread of misinformation and enabling cyber attacks
    D. by eliminating the need for citizens to participate in political activities

18. Which ethical principle emphasises treating others as you would like to be treated in return?
    A. Slippery Slope Rule
    B. Golden Rule
    C. Utilitarian Principle
    D. Risk Aversion Principle

Continued ...

19. In the context of intellectual property protection, what does Digital Rights Management (DRM) aim to achieve?
    A. Ignoring copyright laws to promote creativity.
    B. Eliminating the need for any copyright regulations.
    C. Preventing unauthorised copying and distribution of digital content.
    D. Encouraging unrestricted sharing of digital content.

20. How have information systems influenced the evolution of laws and regulations?
    A. They have made laws and regulations obsolete, leading to their complete elimination.
    B. They have necessitated the creation of new laws and regulations to address digital and cyber-related issues.
    C. They have rendered traditional legal systems ineffective and irrelevant.
    D. They have not had any impact on the legal landscape.

(Total: 20 marks)

SECTION B: Structured Questions (80 Marks)

QUESTION 1

(a) Identify and elaborate on **FIVE (5)** unique features that significantly contribute to the rapid growth of e-commerce. (10 marks)

(b) List and describe **FIVE (5)** methods an e-commerce business could use to generate revenue. (10 marks)

(Total: 20 marks)

QUESTION 2

(a) Discuss **THREE (3)** types of AI techniques used in sectors such as customer service, education, manufacturing, healthcare, transportation, gaming, and finance. Provide an example to illustrate the usage of those techniques. Give **ONE (1)** company which uses AI technique in their business. (10 marks)

(b) Compare the difference between systems development life cycle and prototyping methods for building information systems. Discuss **TWO (2)** advantages, and **TWO (2)** disadvantages for each method. (10 marks)

(Total: 20 marks)

Continued ...

QUESTION 3

(a) Identity theft is a crime in which an imposter obtains key pieces of personal information, such as IC numbers, driver's license numbers, or credit card numbers, to impersonate someone else.

i) Explain **TWO (2)** impacts of identity theft on individuals and organisations, and **TWO (2)** strategies to prevent it. (8 marks)

ii) List **TWO (2)** technologies that can be used in preventing identity theft. (2 marks)

(b) Users can choose from several methods to access a system, but it's important to have proper authorisation and use two-factor authentication (2FA) for added security.

i) Define two-factor authentication (2FA). (1 mark)

ii) Highlight **TWO (2)** effectiveness of two-factor authentication (2FA) in protecting sensitive data and accounts. (3 marks)

iii) Discuss **THREE (3)** methods of implementing 2FA, making it more difficult for attackers to gain unauthorised access. (6 marks)

(Total: 20 marks)

QUESTION 4

(a) Discuss **FOUR (4)** property rights that individuals or organisations can employ to protect their intellectual property. Provide examples to illustrate your points for any **TWO (2)** of the property rights. (10 marks)

(b) List **FOUR (4)** potential health risks associated with prolonged computer usage among individuals, particularly pre-university students. Briefly explain the bad effects on the body and mind when we use computers for a long period of time. Suggest **TWO (2)** possible strategies to prevent these problems. (10 marks)

(Total: 20 marks)

End of Paper